



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|-------------------------|------------------|
| 10/514,415 | 11/15/2004 | Masakazu Muranaka | 2271/73277 | 2428 |
| 23432 7590 03/20/2007 COOPER & DUNHAM, LLP 1185 AVENUE OF THE AMERICAS NEW YORK, NY 10036 | | | EXAMINER VO, ANH T N | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2861 | |

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 03/20/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/514,415

Applicant(s)

MURANAKA ET AL.

Examiner

Anh T.N. Vo

Art Unit

2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) 11-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-10 and 23-46 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 11/15/04 & 1/26/07.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Election /Restriction

1. Applicant 's election without traverse of invention I filed on 12/18/2006 is acknowledged.
2. Claims 11-22 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b) as being drawn to non-elected invention. Election was made without traverse filed on 12/18/2007.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The references cited on PTO 1449 have been considered.

Claim Objection

Claims 1, 3, and 26 are objected to because of the following informalities:

- * In claim 1, line 8, "discharging opening" should be changed to --discharge port-- for consistent language.
- * In claim 3, line 3, "is" should be changed to --are-- for avoiding grammar error.
- * In claim 26, line 2, "there is provided" should be changed to --said holding member includes-- for clearer language and on line 4, the word "it" should be deleted, as the term "it" is indefinite. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 6-8, 10, 23-26, 28-30 and 44-45 are rejected under 35 USC 102 (b) as being anticipated by Barinaga (US Pat. 5,721,576).

Barinaga discloses in Figures 1-4, 7-9 and 13-14 an ink jet printer comprising:

- a flexible bag body (24) of a generally rectangular form (Figure 1);
- a holding member (22, 32, see Figures 1-2 and 7) attached to one edge of said bag body (24), said holding member (22, 32) comprising:
 - * an ink filling opening (52) for filling said bag body (24) with ink (Figure 14);
 - * an ink discharging opening (28) for discharging the ink inside said bag body (24) (Figure 2);
 - * an engaging part (124) for holding said ink bag (24) to a cartridge case (30) in which said ink bag (24) is accommodated (Figure 2);
- wherein a width-to-height ratio (W/H) of said bag main body falls in the range of $1 \leq W/H \leq 1.5$ (Figure 2);
- wherein said ink filling opening (52) is sealed by a septum (52) in the state in which said bag main body (24) is filled with ink (Figure 2);
- wherein said holding member (22, 32) is provided to a longer edge of said ink bag main body (24) (Figure 2);

- at said ink discharging port (28), an elastic member (104) sealing an opening at a distal end part of said ink discharging port (28) and a cap member (106) holding down said elastic member (104) (Figures 1-2);
- wherein said holding member (22, 32) includes a stepped part (108) on a circumferential surface of said ink discharge port (28) for engagement with an engaging piece provided on said cap member (106) (Figures 1-2);
- wherein said cap member (106) is a cylindrical member having a flange part that holds down said elastic member (104), and wherein said cylindrical member has plural engaging pieces bent inward (Figures 1-2);
- an engaging part (124) for engagement with a corresponding engagement part (122) provided to at least one of case half bodies (30), said case half bodies constituting together a cartridge case (30, 22, 32) of said ink cartridge (20) (Figures 1-2);
- case half bodies (30 and 22, 32) forming together a single cartridge case of said ink cartridge (20), at least one of said case half bodies (22, 32) having a holding part for holding a holding member (22, 32) formed with said ink discharge port (28) (Figures 1-2);
- an elastic member (104) provided at a distal end part of said ink discharge port (28) of said holding member (22, 32) for sealing an opening (Figure 2);
- a cap member (106) for holding down said elastic member (104) (Figures 1-2);
- wherein an outer diameter D of said elastic member (104) and an inner diameter D' of a part to which said elastic member is inserted forms a ratio $D:D'$ so as to fall in the range of 1:0.85-1:0.92 (Figures 1-2);
- wherein a thickness t of the said elastic member (104) and a depth H of a part in which said elastic member is inserted forms a ratio $t:H$ falling in the range of 1:0.77-1:1 (Figures 1-2);
- wherein a hollow needle (162) pierced into said elastic member (104) for taking out said ink held inside said bag main body (24) has a diameter d determined such that a ratio $d:D$ of said

Art Unit: 2861

diameter d to an outer diameter D of said elastic member falls in a range of 1:3-1:10 (Figure 8); and

- wherein a hollow needle (162) pierced into said elastic member (104) for taking out said ink held inside said bag main body (24) has a diameter d determined such that a ratio $d:t$ of said diameter d to a thickness t of said elastic member falls in a range of 1:1.5-1:3.5 (Figures 1-2 and 8).

Claims 23-24 are rejected under 35 USC 102 (b) as being anticipated by Mochizuki (US Pat. 6,267,474).

Mochizuki discloses in Figures 2-3, 5-7(c) an ink jet recording device comprising:

- an ink bag comprising an ink filling opening (51) for filling ink to said bag main body (50) (Figures 3 and 5);
- an ink discharge port (52) for discharging said ink inside said bag main body (50) (Figures 3 and 5); and
- and an engaging part (an unmarked projection that is extended from an unmarked upper cover) for engagement with a corresponding engagement part (an unmarked hole of an element 54) provided to at least one (54) of case half bodies, said case half bodies constituting together a cartridge case of said ink cartridge (20) (Figures 3 and 6).

Claims 25-26 are rejected under 35 USC 102 (b) as being anticipated by Ptranek (US Pat. 6,705,714).

Ptranek discloses in Figures 1-15 an ink cartridge comprising:

- case half bodies (12, 14) forming together a single cartridge case of said ink cartridge (10), at least one (14) of said case half bodies (12, 14) having a holding part (54) for holding a holding member (40) formed with said ink discharge port (32) (Figures 1 and 4);
- an elastic member (30) provided at a distal end part of said ink discharge port (32) of said holding member for sealing an opening (Figure 2);
- a cap member (34) for holding down said elastic member (30) (Figure 2); and
- wherein there is provided a stepped part (20) to a circumference surface of said ink discharge port (32) so as to engage with an engaging piece provided it to said cap member (34) (Figure 2).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior arts are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 9, 27, and 31-42 are rejected under 35 USC 103 (a) as being unpatentable over Barinaga (US Pat. 5,721,576) in view of Miyazawa et al. (US Pat. 5, 896,151) and further in view of Sasaki et al. (US Pat. 7,137,689).

Barinaga discloses the basic features of the claimed invention were stated above but does not disclose said holding member of said ink bag is held in such a state that said ink discharge port is located generally at the center of said cartridge case in a height direction thereof when said ink bag is accommodated in said; wherein said ink discharge port includes a cylindrical part forming an outlet hole of said ink inside said bag main body, and wherein said cylindrical part is formed with a material that does not exert influence to properties of said ink;

wherein said cylindrical part has a holding part holding an elastic member inserted to said outlet hole for sealing in the form of a unitary body; wherein said ink discharge port has an elastic member for sealing an outlet hole of said ink inside said bag main body, and wherein said elastic member is formed with a material that does not exert influence on properties of said ink;

wherein said ink discharge port is provided with a cap member so as to cover at least a part of an elastic member sealing an ink outlet hole of the ink inside said bag main body, said cap member being formed with a material not exerting influence on the properties of said ink; and wherein said elastic member is formed of a rubber of silicone or silicone based rubber not exerting influence to properties of said ink.

Miyazawa et al. disclose in Figures 1-2 and 4A-5 an ink cartridge for an ink jet printer comprising:

- said holding member (15) of said ink bag (20) is held in such a state that said ink discharge port (22) is located generally at the center of said cartridge case (1, 3) in a height direction thereof when said ink bag (20) is accommodated in said cartridge case (1, 3) (Figure 5);
- wherein said ink discharge port (22) includes a cylindrical part forming an outlet hole of said ink inside said bag main body (20), and wherein said cylindrical part is formed with a material that does not exert influence to properties of said ink (Figure 5);
- wherein said cylindrical part has a holding part holding an elastic member (23) inserted to said outlet hole for sealing in the form of a unitary body (Figures 2 and 5);
- wherein said ink discharge port (22) has an elastic member (23) for sealing an outlet hole of said ink inside said bag main body (20), and wherein said elastic member (23) is formed with a material that does not exert influence on properties of said ink (Figures 2 and 5); and
- wherein said ink discharge port (22) is provided with a cap member (21) so as to cover at least a part of an elastic member (23) sealing an ink outlet hole of the ink inside said bag main body

(20), said cap member (21) being formed with a material not exerting influence on the properties of said ink (Figures 2 and 4A-4D).

Sasaki et al. disclose in Figures 12-14 and 20 an ink cartridge (200) comprising said elastic member (262) sealing said ink discharge port (260), said elastic member is formed of a rubber material selected from a silicone rubber material (column 32, lines 11-12).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate the teaching of Miyazawa et al. and Sasaki et al. in the Barinaga ink jet printer for the purpose of providing an elastic member to seal an ink discharge port for ink leakage prevention.

Claim 46 is rejected under 35 USC 103 (a) as being unpatentable over Barinaga (US Pat. 5,721,576) in view of Mochizuki (US Pat. 6,267,474).

Barinaga discloses the basic features of the claimed invention were stated above but does not disclose and said ink cartridge is loaded from a front side of an apparatus body of said ink-jet recording apparatus.

Mochizuki discloses in Figures 1-3 an ink jet recording device comprising said ink cartridge (9) is loaded from a front side of an apparatus body of said ink-jet recording apparatus.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate the teaching of Mochizuki in the Barinaga ink jet printer for the purpose of easily replacing an ink cartridge when ink is empty from the ink cartridge.

Claims 5 and 43 are rejected under 35 USC 103 (a) as being unpatentable over Barinaga (US Pat. 5,721,576) in view of Kasai (JP Pat. 401180351A).

Barinaga discloses the basic features of the claimed invention were stated above but does not disclose said ink filling opening is sealed by welding in the state in which said bag main body is filled with ink.

Kasai discloses in Figure 1 an ink reservoir comprising a film member (3) that seals said ink filling opening (2) by welding in the state in which said bag main body (6) is filled with ink (see constitution).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate the teaching of Kasai in the Barinaga ink jet printer for the purpose of providing a seal to prevent air from entering into the ink reservoir with low cost and reliability.

Citation of Pertinent Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. These prior art references (US Pat. 5,400,066; US Pat. 5,307,091; US Pat. 6,106,112; US Pat. 6,264,314; US Pat. 6,609,789) cited in the PTO 892 form show an ink cartridge for use in an ink jet printer which is deemed to be relevant to the present invention. These references should be reviewed.

Allowable Subject Matter

Claim 3 would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims. Claim would be allowable because the prior art references of record fails to teach or suggest an ink bag holding ink therein comprising an ink filling opening and an ink discharge port of a holding member are located generally at a center of an edge of a bag main body of the ink bag in the combination as claimed.

Art Unit: 2861

CONCLUSION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Anh Vo whose telephone number is (571) 272-2262.

The examiner can normally be reached on Tuesday to Friday from 9:00 A.M. to 5:30 P.M..

The fax number of this Group 2861 is (571) 273-8300.

A handwritten signature in black ink, appearing to read 'Anh T.N. Vo', with a long horizontal flourish extending to the right.

**ANH T.N. VO
PRIMARY EXAMINER**

March 16, 2007